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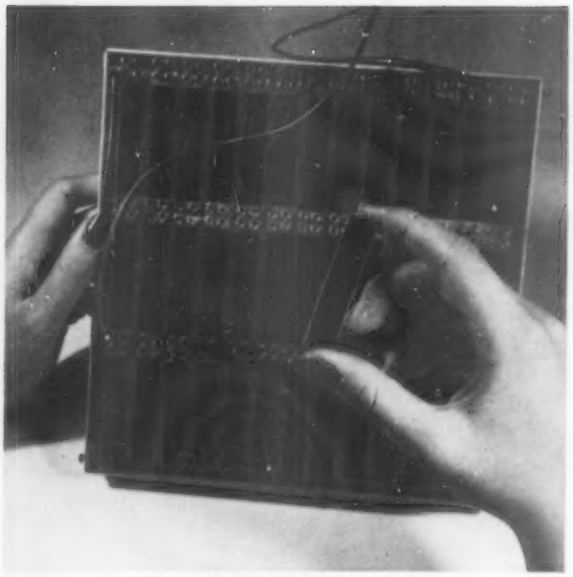
SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE

Tasty Tidbit

See Page 7

A SCIENCE SERVICE PUBLICATION



The Bell Solar Battery. A square yard of the small silicon wafers turns sunshine into 50 watts of electricity. The battery's 6% efficiency approaches that of gasoline and steam engines and will be increased. Theoretically the battery will never wear out. It is still in the early experimental stage.

Bell Solar Battery

Bell Laboratories scientists have created the Bell Solar Battery. It marks a big step forward in converting the sun's energy directly and efficiently into usable amounts of electricity. It is made of highly purified silicon, which comes from sand, one of the commonest materials on earth.

The battery grew out of the same long-range research at Bell Laboratories that created the transistor—a pea-sized amplifier originally made of the semiconductor germanium. Research into semiconductors pointed to silicon as a solar energy converter. Transistor-inspired techniques developed a silicon wafer with unique properties.

The silicon wafers can turn sunlight into electricity to operate low-power mobile telephones, and charge storage batteries in remote places for rural telephone service. These are but two of the many applications foreseen for telephony.

Thus, again fundamental research at Bell Telephone Laboratories paves the way for still better low-cost telephone service.

Inventors of the Bell Solar Battery, left to right, G. L. Pearson, D. M. Chapin and C. S. Fuller—checking silicon wafers on which a layer of boron less than 1/10,000 of an inch thick has been deposited. The boron forms a "p-n junction" in the silicon. Action of light on junction excites current flow.

BELL TELEPHONE LABORATORIES

IMPROVING TELEPHONE SERVICE FOR AMERICA PROVIDES CAREERS
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MEDICINE

Future Medical Cures

Physicians at American Medical Association meeting suggest life-saving treatments, now being used experimentally, for patients of the future.

➤ GLIMPSES OF future healing and life-saving treatments were seen at the meeting of the American Medical Association in San Francisco. These may be the cures for tomorrow's or next year's patients, though they are now in the experimental and planning stages.

These future aids range from new chemicals in the war on cancer to a new way of getting a pea or button out of the lungs of a small child.

For the war on cancer, chemists have developed and doctors are trying the following: Desoxypyridoxine which is made from vitamin B-6; a British drug called GT 41, or Myleran; a Swiss drug called Demecolcin; and a new U.S. chemical, Thio-Tepa, made by chemists at Lederle Laboratories, Pearl River, N. Y. It is related to the nitrogen mustards which doctors have for some years been using to stave off death temporarily in leukemia patients.

Looking for a better anti-cancer chemical, the Lederle scientists first made Tepa, which showed some promise, and then substituted a sulfur molecule for an oxygen molecule and came up with Thio-Tepa.

This very new compound is showing promise in trials in chronic myelogenous leukemia and also in breast cancer.

Thio-Tepa may also save patients from cancer that has spread to other parts of the body after the original growth in breast or uterus or other organ has been removed.

In such cases, surgeons will put the new chemical into the place from which they have removed the cancer. Because Thio-Tepa, unlike some anti-cancer chemicals, can be applied locally it may be used this way to destroy any cancer cells that might break off and stay in the body when the main cancer is being removed. Such stray lost cancer cells are believed to be a source of recurring cancer or spreading cancer after removal of the original growth.

These new chemical weapons against cancer are still on trial and have not yet effected any cures. However, they show that chemical treatment of cancer is valuable and they give promise that still more effective ones will be developed. The new and old and future chemicals for cancer treatment were described by Drs. Jerome J. Oleson and James H. Williams of Lederle Laboratories.

A mechanical coughing device, developed originally to aid polio patients and others who cannot cough up mucus that collects in and plugs the bronchial tubes in the lungs, may in future be used to save babies and older children or grown-ups who accidentally inhale buttons, pins, peas and so on.

At present, the bronchoscope is used for such cases. This long tube with light and mirror arrangement is put down the throat into the lungs, and with instruments put through it the surgeon can often remove the inhaled object. Wonderful as the bronchoscope is, however, it does not reach all parts of the tubes into and through the lungs, particularly those that go off at angles from the main stem. In such cases, an operation must be performed to get the foreign object.

The mechanical cougher, which operates like two vacuum cleaners alternately blowing air into the lungs and sucking it out, is expected to help here. In animals it has already proved capable of freeing and sucking out foreign objects in the lungs. The doctors who developed the machine are ready now to try it on a human patient.

Reporting this and other uses of the mechanical cougher were Drs. Alvan L. Barach, Hylan A. Bickerman, Gustav J. Beck, Edward K. Williams, Louis A. Scarrone and William H. Smith of the College of Physicians and Surgeons, Columbia University, New York.

Science News Letter, July 3, 1954

• RADIO

Saturday, July 10, 1954, 3:15-3:30 p.m. EDT

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Theodore H. Davis, forester, American Forest Products Industries, will discuss "Tree Farming."

ENGINEERING

Electronic "Brain" for New York Power System

➤ AN ELECTRONIC "brain" is concentrating its vacuum tubes upon the changing demand for electric power in New York City so that electric service will always be what the customer pays for.

The computer compares the actual loads at generating plants with the pre-set loading schedules, the American Institute of Electrical Engineers' meeting in Los Angeles was told.

It takes into "consideration" short-time demands that come and go continuously. It increases power generation as the sustained load goes up, and it does this economically.

The electronic watchman simplifies the load-control job of the system operator, reported H. A. Bauman, C. N. Metcalf and J. G. Noest, all of Consolidated Edison Co., and J. B. Carolus of Leeds & Northrup, Philadelphia.

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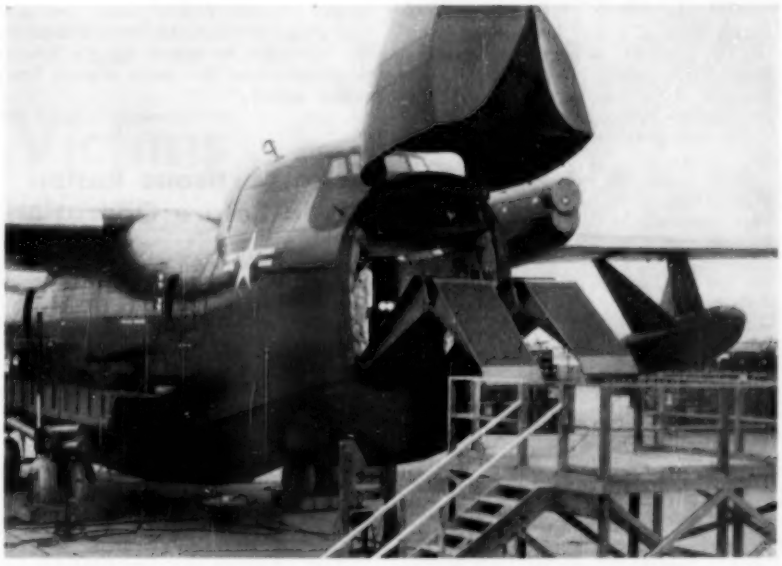

FLYING LST—A water-based plane that can land guns, trucks, supplies or troops directly onto a beachhead, as did the water-bound landing craft of World War II, but much faster, is now in production. The four-engined turboprop transport, R3Y-1, is shown here with its bow door opening prior to loading. The plane, which can load 24 tons, has a flying range of more than 2,000 miles.

MEDICINE

New Pain-Relieving Drug

▶ A NEW and different pain-relieving drug was reported at the American Medical Association meeting in San Francisco.

Dr. John S. Lundy of the Mayo Clinic and Foundation, Rochester, Minn., who reported it, hailed it as perhaps opening a "new, safer and more pleasant era in the art and science of pain relief."

The drug is known so far only by its code name, MRD-125. Its special feature is that it can banish pain, even the pain of a surgical operation, without putting the patient completely to sleep.

This action Dr. Lundy called "analgesic," in contrast to the anesthetic action of drugs such as ether. As an example, Dr. Lundy told how a three-year-old girl with third-degree burns over a fourth of her body was able to stand the pain of having the dressings changed when given an injection of MRD-125.

Previously her physician, Dr. Paul H. Lorham of the University of Kansas Medical Center had had to make her completely unconscious with an anesthetic to stop the pain of dressing changing. With MRD-125 the little girl was awake, felt no pain, and could lift her leg or arm when told to do so as the doctor worked on the bandages.

The first time the new drug was used was for a patient about to have teeth pulled. One doctor watching the procedure and seeing the patient conscious enough to swallow and close his eyes on command ran from the room saying he "could not stay and witness this torture."

However, Dr. Lundy reports, there was no torture and no pain.

The drug is made by the Wm. S. Merrell Company of Cincinnati, Ohio.

Since it became available to him a year ago, Dr. Lundy has used it on 112 patients. Most of these were having teeth pulled. Some were undergoing operations on eye muscles and others were having hemorrhoids removed.

The drug can be used as the only pain-killer, but it can be given in smaller doses if other medicines are given first to quiet the patient. One such is trade-named Hyatrobal.

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MEDICINE

Prevent Fever Relapses

▶ REPEAT ATTACKS of rheumatic fever with consequent serious heart damage in children can now be prevented by once-a-month shots of a new long-acting penicillin, Dr. Gene H. Stollerman of Irvington House, Irvington-on-Hudson, N. Y., announced at the meeting of the American Rheumatism Association in San Francisco.

The new penicillin is called Dipenicillin G.

Other medicines, including other forms of penicillin, given in recent years to prevent return attacks of rheumatic fever must be taken one or several times each day to be effective. Children, especially when they do not feel sick, are all too likely to skip the daily or three times daily pills. This makes them run the risk of another rheumatic fever attack.

The difficulty of keeping up this daily treatment until adulthood is shown by the fact that only 45 of 315 children followed for two years were getting the treatment. This study was reported by Dr. H. J. Dodge of Denver.

The Dipenicillin G, Dr. Stollerman pointed out, is given by a doctor or nurse so "we know the patient has gotten it." His study showing its effectiveness was made on 138 out-patients, children who had recovered from acute rheumatic fever, and another 270 rheumatic children hospitalized in Irvington House in the acute and convalescent stages of the disease.

"There were no recurrences of rheumatic fever observed in either group," Dr. Stollerman said. "All patients admitted to the study without clinical evidence of heart disease remained normal during the two-year period of treatment. New changes to the valves (of the heart) did not develop in patients who had some organic heart disease initially."

Science News Letter, July 3, 1954

MEDICINE

Extra Cortisone Ration Given Before Operation

▶ ARTHRITIS PATIENTS undergoing operations will get along better if given an extra "emergency ration" of the anti-arthritis cortisone which they have been taking, Dr. Philip S. Hench of the Mayo Clinic, Rochester, Minn., Nobel prize winner and co-discoverer of cortisone for arthritis, declared at the meeting of the American Rheumatism Association in San Francisco.

Cortisone is an adrenal gland hormone released under the stimulation of the pituitary gland.

"Some patients who have received preoperative preparation with cortisone, Dr. Hench said, "might have been able to withstand the stress without the preparation.

"Unfortunately, currently available methods do not permit any accurate assessments of the adequacy of a person's pituitary-adrenal response. But from experience we know that the pre-operative preparation with cortisone has eliminated fatalities from postoperative insufficiency of this glandular response."

Dr. Hench added that the cortisone build-up has not in any way impaired the healing of wounds or the body's resistance to infection.

The cortisone emergency ration is started 48 hours before the operation so as to provide a "bulwark" against the strain of the operation. It has not only helped arthritics withstand safely the effects of surgery but also the effects of anesthesia, severe injury and burns.

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SCIENCE NEWS LETTER

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MEDICINE

Arsenic Spots Tumors

► BRAIN TUMORS, which make up five percent of all cancers, can be spotted early by radioactive arsenic in a paper pattern method announced at the American Medical Association meeting in San Francisco.

The method was devised by Dr. Gordon L. Brownell, physicist, and Dr. William H. Sweet, brain surgeon, of Massachusetts General Hospital, Boston.

Radioactive arsenic is injected into the patient's veins. The amount of arsenic is so small it cannot poison the patient. Then the patient lies for one hour with his head comfortably supported between two Lucite arms, or grids, connected to a machine that records radiation densities.

Radioactive arsenic is one of several chemicals that concentrates in brain tumors. The machine continuously scans the head at a predetermined rate to pick up the arsenic location. Then it prints on a paper outline of the head a pattern of either curved or straight lines.

If a tumor is present, the lines are close together over the exact region of the tumor. If the lines are curved, this means the tumor is on the right side. If they are straight, the tumor is on the left.

The method is painless and simple for the patient. It does not involve an operation to inject air or dyes into the head, as previous methods do. It has been used on some 300 patients with about 75% accuracy in spotting brain tumors and even higher accuracy in spotting brain abscesses.

Dr. Sweet now considers it so accurate that if the patient's symptoms point toward a brain tumor and the new machine confirms this, he operates without resorting to other methods for determining the tumor's location.

He and Dr. Brownell are now working on a new machine which they expect will have an even higher accuracy rating.

One important advantage of the new method is that it can distinguish between brain tumor and a clot or hemorrhage on the brain. The arsenic does not pour into the bloodless or hemorrhagic area of the brain. This should be valuable in older patients who might from the symptoms have either a tumor or a stroke from blood clot or hemorrhage on the brain.

In many of these, marked improvement following the attack leads to the false assumption that it was a stroke. Then the tumor may be overlooked until it gives further symptoms by which time it may be too late to save the patient.

The radioactive arsenic tumor detection method differs from other radioactive chemical detecting methods. Instead of depending on the gamma rays from the radioactive chemical to spot the tumor, it depends on annihilation of positrons. When these are given off by the radioactive arsenic and collide with an electron, the positrons are annihilated. Then two electromagnetic quanta leave the scene back to back.

The new machine is designed to record each photon of the annihilation pair. This coincidence counting system eliminates scattered radiation that would obscure the tumor pattern and gives a more accurate and exact picture of the tumor.

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SUPER MICROSCOPE — T. A. Smith, left, vice president of the Radio Corporation of America, explains operation of world's most powerful electron microscope to Oscar Thorsing, permanent delegate to United Nations from Sweden, who accepted new instrument for the Karolinska Institute in Stockholm.

MEDICINE

Aid Sclerosis Victims

► NEW HELP for multiple sclerosis patients was reported by Dr. Richard M. Brickner of New York at the meeting of the American Medical Association in San Francisco.

The help, which Dr. Brickner calls "relief by flush," is not a cure. But it does relieve new symptoms of the disabling disease, abolishing them or reducing them for a long time so that the patient can be kept relatively free of the new symptoms.

Multiple sclerosis, or MS as it is called for short, is a baffling disease of the nerves in which nerve sheaths are destroyed. Symptoms, which vary from double vision to loss of bladder control and inability to walk, develop according to which nerves are affected.

Since there is no cure for the disease, patients might be saved some of the more disabling features if new symptoms could be controlled.

The "relief by flush" which Dr. Brickner reported is obtained by giving drugs that dilate blood vessels. Amyl nitrite, familiar to many heart disease patients, is one of the drugs Dr. Brickner uses. Another is histamine diphosphate, given by iontophoresis, in which an electric current carries the drug through the skin. Or the patient may be given carbon dioxide to breathe for about 10 minutes.

The "flush" from these blood vessel dilating drugs comes within a few minutes and lasts only a short time. For this reason when the phenomenon was first discovered, doctors did not think the accompanying relief of symptoms would last. However, Dr. Brickner has now found that symptom relief lasts from a few hours to several days and "sometimes indefinitely."

"Relief by flush" has now been given to 77 patients for 250 symptoms. More than 90% of new symptoms have been relieved in more than 90% of the patients.

If the symptoms return, the treatment can be repeated and will again give relief.

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BIOCHEMISTRY

Cell Acid May Give Male Fertility Index

► DISCOVERY OF a possible index to a man's ability to father children was announced by Drs. David R. Weir and Cecilie Leuchtenberger of Cleveland at the meeting of the American Society for the Study of Sterility in San Francisco.

When a couple tries unsuccessfully to have children, the cause of sterility may be some condition in either the husband or the wife.

The new index to male fertility is based on the amount of an acid in the spermatozoa, the male germ cells. The acid is DNA, short for desoxyribosenucleic acid. This acid is found in the nucleus of cells and is considered one of the vital chemicals of the body.

In a group of human males of proved fertility, the amount of DNA per spermatozoon was very constant and uniform for each person and for the group as a whole, the Cleveland researchers found.

In childless couples, where study of the wife showed she is presumably fertile, the DNA content of the husband's spermatozoa is often abnormal. In such cases of abnormal DNA content, the routine semen analysis is also usually, but not always, abnormal.

In some couples where routine study showed no cause for the childlessness, the DNA content of the spermatozoa is abnormal.

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A *termite* colony may contain 3,000,000 individuals.

MEDICINE

Chemicals in Cigarettes

► ARE THERE two dangerous chemicals in cigarette smoke? Or one? Or several?

These are among the questions raised by the American Cancer Society's finding that cigarette smokers among men aged 50 to 70 have a higher death rate, by as much as 75%, than non-smokers of the same age.

Nicotine, tar, carbon monoxide and unknown chemicals in the tobacco leaf may each or all cause enough damage over the years to shorten a smoker's life.

Heavy cigarette smokers die earlier, and it is not lung cancer alone that takes them. The death rate is higher for cancer regardless of the type among heavy smokers than non-smokers, and it is higher for heart and blood vessel diseases.

This last fact points to nicotine as being at least partially responsible, since nicotine is known to affect the heart and blood vessels, making the heart pump faster and adding to its work by narrowing the arteries through which it must pump blood.

Cigarette tars are under investigation now. Drs. E. Cuyler Hammond and Daniel Horn of the American Cancer Society think their new statistical evidence that smoking shortens life will spur more, faster research to find the possible cancer-causing chemical in these tars. Then should come efforts to remove it—that is, if people want to continue smoking.

A radical change in smoking habits will not come for a generation among the general population, Dr. Charles Cameron of the American Cancer Society predicted. He thinks, however, doctors will stop now, because they will feel morally obliged to be an example to their patients whom they advise to stop smoking.

In the "admittedly grim" picture of smoking, cigarettes show up worse than cigars and pipes. They seem to deserve the label, "coffin nails," given them a generation or more ago. This, again, may be a matter of tobacco chemistry. The fast burning types of tobacco used for cigarettes may come from plants that have some dangerous chemical other than nicotine.

This smoking report does not rule out air pollution as a contributing cause of lung cancer. On the contrary, Dr. Hammond seriously fears that this relatively new factor added to the effects of heavy smoking may make the situation even worse.

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MEDICINE

Recipe For Long Life

► IF YOU want to live long, you may have to give up a number of things many people now enjoy but which doctors know or suspect shorten life.

At the top of the list right now is smoking, particularly cigarette smoking. This is on the basis of the American Cancer Society's statistical study of 187,766 men between the ages of 50 and 70. This showed that heavy smoking, a pack or more a day of cigarettes, more than doubles the death rate from cancer and nearly doubles that from coronary artery type of heart disease.

Alcohol would get a place on the list of things to give up. A study like the smoking study might well be made to determine the effects of heavy and moderate drinking on the death rates from various diseases and length of life.

"Doctors know alcohol does not do your heart any good," Dr. Charles Cameron, medical and scientific director of the American Cancer Society, told SCIENCE SERVICE.

As for cancer, there is, he said, fragmentary evidence from the Scandinavian countries that cancer of the esophagus, or gullet, and of the pharynx, or throat, is higher in barkeepers and hotel men.

Many people have already been advised to give up the sweet and fat foods they like. Overeating and consequent overweight have long been held responsible for shortening life.

Perhaps some would add tea and coffee to the list of enjoyable things to be given up on the basis that of these, also, there may be a point at which one gets "too much of a good thing."

Sexual activity also is a suspicious link with cancer. A Canadian scientist found in an extensive study of nuns that cancer of the cervix, or neck of the womb, did not occur among these women although it is the leading cancer killer among women in the general population.

With all of these things, including smoking, there is probably a constitutional factor that makes some persons more resistant to any damaging effects. How to pick the resistant or the susceptible ones, and how to know the critical point of "too much" are questions that cannot yet be answered.

"One cannot avoid the conclusion," says Dr. Cameron, "That austere people are less susceptible than the full-blooded, sthenic ones."

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MEDICINE

Filtered Cigarettes May Not Stop Cancer

► FILTERING CIGARETTE smoke in the hope of preventing cancer of the lung may be the wrong thing to do, inquiries in New York suggest.

Dr. Charles S. Cameron, vice president of the American Cancer Society, has explained that there is a possibility that the smoke particles actually absorb and, therefore, immobilize the substances in the products of cigarette combustion that possibly cause cancer.

If filters or filter-tip cigarettes are used to hold back the smoke particles, the suspected carcinogenic materials may not be absorbed by the smoke and, therefore, pass on into the lungs. Reduction of smoke may thus give a false sense of security to the smoker.

This is one possibility now being investigated.

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ENTOMOLOGY

Tiger Beetles to Be Freed in New Jersey

► TIGER BEETLES will be freed in the New Jersey pine barrens as part of a study in evolution.

Dr. Mont Cazier, American Museum of Natural History entomologist, this summer will collect these colorful beetles in Nevada, Arizona, California and Mexico. Mature adult beetles will then be let loose in a naturally isolated area of southern New Jersey where they will have little chance of escaping.

When a new beetle generation appears and grows up during the next three years, the changes in color and markings will be observed. Scientists suspect that these variations are caused by different environments. Tiger beetles will also be transferred from place to place within the Southwest.

If the beetles escape from their new New Jersey homes, the scientists say that farmers need not worry. The tiger beetles feed on other insects harmful to crops.

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ENGINEERING

Swedes Boost Voltage To Cut Power Cost

► SWEDISH ELECTRICAL engineers have cut transmission costs 40% by upping the voltage on their long-distance power lines from 230,000 to 400,000 volts.

Results of an economic study covering the high-voltage experiment were reported to the American Institute of Electrical Engineers meeting in Los Angeles by B. G. Rathsman, Gunnar Jancke and Sven Lalander, engineers from the Swedish State Power Board.

The men attributed the savings to new and better line equipment and substation switchgear.

Annual consumption of electricity in Sweden equals that in the United States on a per capita basis—3,100 kilowatt hours. But transmission problems are different since most Swedish power is generated in the northern part of the country and since 75% of the population lives 300 miles away in south Sweden.

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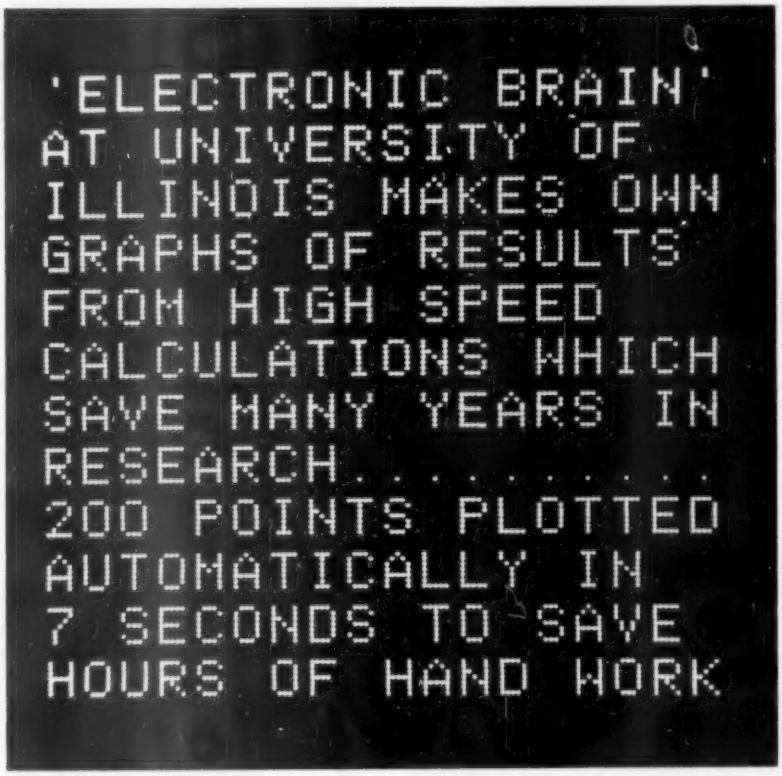

COMPUTER DRAWS PICTURES—A photograph of the cathode ray screen of the Illiac, electronic computer at the University of Illinois, tells in headline form of its newest accomplishment. Results can now either be tapped out by an electric typewriter, flashed on a screen or plotted in a diagram that is then photographed.

PHYSICS

Future World's Poison

➤ ATOMIC POWER threatens to poison the future world with radiation from the waste fission products of uranium. Scientists at the International Congress of Nuclear Engineering at the University of Michigan pondered figures presented by W. A. Roger of Argonne National Laboratory, Chicago.

Assuming atomic power coming into widespread use by the end of the century, there would be three tons of "hot" waste from the many reactors to be disposed of each day.

If the strontium 90 alone produced were diluted with water to a radiation that can be tolerated, it would require about five percent of the entire world ocean volume. Mr. Roger finds that the oceans are not big enough to hold the activity that conceivably may be produced and that this sort of dispersal is not the solution.

Because relatively small amounts of radioactive wastes have been produced so far, disposal has been possible by mixing them with large volumes of water or air, and by burying them as solids or liquids underground or in the depths of the sea. Burial vaults have actually been used in some cases.

Mr. Roger believes that at least during our lifetimes we shall need to isolate and control the radiating wastes in deserts or deep in abandoned mines.

Radiation may have important industrial uses, such as for food preservation, so that cost of handling and storing the waste from atomic power plants may be paid for by use of the radiation. Although this will not solve the menace of radiation or its control over the years, it would provide money to handle the problem.

Radioactivity of the fission products goes on and on, with intensity decreasing by half in varying times, 19.9 years for strontium 90 and 33 years for cesium 137. The radiation hangs around for a long, long time.

Concentrating the wastes and immobilizing them as solids is being worked upon, and Mr. Roger hopes that it may be possible to put the wastes on clay or glass-forming materials and vitrify them so that water cannot leach them out and menace the earth in decades to come.

Although the debris from atomic power plants is very dangerous stuff, the amount is not large compared with the volume that is required to bury our dead. Actually, only a thousandth of the volume occupied by the coffins of the million and a half who die each year would be needed for safe burial of atomic waste.

Pyramids, or radioactive "tombs," of the new atomic age may rise in remote areas to safeguard the world from this new menace.

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PUBLIC HEALTH

Rabies Treatment From Serum Now Available

➤ AN ANTI-RABIES serum for humans that should make rabies prevention safer and better is now available to doctors. The new serum, made from blood serum of horses that have been immunized to rabies, will be used with the standard anti-rabies vaccine given to persons who have been bitten by a rabid dog or other animal.

It should be especially helpful in cases of a bite on the head or neck. These bites are particularly dangerous. The new serum may also make it possible to give fewer shots of anti-rabies vaccine. This would both shorten the now long course of treatment and lessen the danger of encephalitis from the vaccine.

Anti-rabies vaccine, or Pasteur treatment as it is commonly called, must be given in any case to protect against the disease, which otherwise is always fatal.

The new anti-rabies serum was developed by Dr. Hilary Koprowski and associates at Lederle Laboratories, Pearl River, N. Y. It has had extensive trials in animals and humans and will now be available generally, the manufacturers announced in New York.

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TECHNOLOGY

Plastics Treated to Discourage Nibbling Rats

See Front Cover

➤ CERTAIN PLASTICS, many manufacturers have found, are treated by rats as though they were the choicest of appetizers.

To discourage such destructive nibbling, investigators at Minneapolis-Honeywell use a group of white rats in testing new types of plastic coverings for wires.

The rodents are alternately under- and overfed while scientists check their likes and dislikes.

On the cover of this week's SCIENCE NEWS LETTER, a long-tailed rat is shown ignoring a cheese appetizer to sniff the plastic warily. If he nibbles, the scientists will promptly "rat" on him and all his brothers by adding a strong repellent to the new coating.

Science News Letter, July 3, 1954

PSYCHOLOGY

Women Show Femininity From Moment of Birth

➤ WOMEN SHOW their femininity from the moment of birth, a Dutch psychologist, Dr. Frederic J. J. Buytendijk of Utrecht told the Fourteenth International Congress of Psychology meeting in Montreal.

Even as young children, the movements of boys and girls show striking sex differences, Dr. Buytendijk said. You can tell a boy by his brusque, abrupt, energetic, expansive, even aggressive movements.

The movements of a girl are more pliant, more fluent, more harmonious, more wavelike.

From birth, Dr. Buytendijk said, the little boy sees objects as obstacles challenging him to resist and master them. The little girl, in contrast, sees the world and her mother as something to adapt herself to.

Girls learn to dress themselves much more efficiently and earlier than boys, due to a better fine motor coordination and especially a more flexible rotation at the wrist.

The original sex differences are especially obvious in the contrast between "work" and "care," Dr. Buytendijk explained.

"Work," he said, "is always achievement, creation, production of forms that have their basis in the will to rule." This, he implied, is man's part in the world.

"The act of caring takes place in the dynamics of adjustment and in being conscious of values that are not created, but discovered, that one has to protect, to sustain and to improve in a constant cooperation with other beings."

Science News Letter, July 3, 1954

BIOCHEMISTRY

Nerve-Stimulating Drug Tells Early Pregnancy

➤ A DRUG test for early pregnancy has proved 100% accurate in trials on 77 women at St. Vincent's Hospital, New York, Drs. Thomas E. Lavell, George Knauer Jr. and C. McNeill Winterhalter report in the *New York State Journal of Medicine* (June).

The drug is called Stigmonene Bromide by its manufacturers, Warner-Chilcott Laboratories. Chemically, it is benzpyrinium bromide.

The test is based on ability of the drug to induce menstruation that has been delayed for reasons other than pregnancy or organic disturbances. The drug is a cholinergic agent, acting to stimulate nerves of the parasympathetic system.

Why this should start menstruation in non-pregnant women is not known exactly. It is believed it may act by dilating blood vessels in the uterus. Nervous and emotional factors have long been known to play an important part in menstruation.

In the trials at St. Vincent's Hospital, the Aschheim-Zondek rabbit test, long a standard test for early pregnancy, was also given the women. It proved inaccurate in 14.5% of the cases.

There were no ill effects of the drug on either the women or their unborn children.

Organic pelvic disease, menopause, previous menstrual irregularity or hormonal disorders make the test inconclusive.

Doctors also warn the drug should not be given in the presence of bronchial asthma or mechanical obstruction of the gastrointestinal tract or urinary bladder, and should be given with caution to patients with respiratory difficulties, bradycardia or heart block.

Good results with it have also been reported by Dr. Albert Decker of New York and Drs. E. N. Bookrajian and William Truter of the Jersey City Medical Center.

Science News Letter, July 3, 1954

ASTRONOMY

Discover First Solar Photospheric Circulation

➤ THE FIRST evidence that the sun's visible surface, or photosphere, has a circulation of its own has been reported to the Royal Astronomical Society in London.

Miss A. B. Hart of Oxford University Observatory said that studies there during the last four years show the sun may have "stable velocity fields" lasting several hours.

Changes in the velocity of the sun's rotation indicate the circulation, and are probably due to velocity fields. The variations were discovered when astronomers at Oxford tried to pin down the exact period of the sun's photospheric rotation at the equator. The measured velocities varied considerably, too much to be accounted for by errors in the measurements.

Statistical analysis showed that "the chance is less than one in a thousand that the solar rotation is constant in the equatorial region," Dr. Hart said.

Astronomers have known for about 50 years that the sun's photosphere took less time to rotate at the solar equator than at either side of it. Previously, however, they have always considered that the equatorial rotation was constant, rather than changing as the Oxford astronomers have now reported in the Royal Astronomical Society's *Observatory* (April).

Science News Letter, July 3, 1954

PSYCHOLOGY

Man Speaks Because He Is Superior, Not Reverse

➤ IT IS not his ability to use language that gives man his superiority over the lower animals, Dr. Silvan S. Tomkins of Princeton University told the Fourteenth International Congress of Psychology meeting in Montreal.

Instead, he owes that fact that he can talk to the superiority of his nervous system. In fact, Dr. Tomkins said, a human being can be best understood as an intercommunication system for the reception, transmission, translation and transformation of messages, conscious and unconscious.

Science News Letter, July 3, 1954

IN SCIENC

STATISTICS

1954 Baby Births Top 1953 So Far

➤ BABY BIRTHS during the first four months of 1954 topped the same period of 1953 by about 30,000, the Public Health Service of the Department of Health, Education, and Welfare has announced.

However, marriages this year have continued to fall, after sinking in 1953 to 9.7 marriages per thousand population, the lowest annual rate since 1933. Compared with the first four months of 1953, marriages in the same period this year dropped by 25,000.

Total registered and unregistered births in 1953, estimated at 3,971,000, broke all previous records. The 1953 rate of 25.1 births per thousand population was one of the highest in many years.

Because of the low birth rates in the '30's, relatively few young people have been reaching marriageable age recently. Also, the wave of marriages beginning in 1946, when an all-time peak of 2,291,000 marriages occurred, sharply reduced the number of single young people in the population.

Much of the increase in 1953 and 1954 births can probably be attributed to a continuing rise in the number of third and fourth children. An increase in the number of first births is not expected, because of falling marriage rates since 1951.

Science News Letter, July 3, 1954

TECHNOLOGY

Hearing Aid Radio for Civil Defense Personnel

➤ CIVIL DEFENSE authorities may get an earful of instructions in the future through a new vest-pocket radio that resembles a hearing aid.

Now in an experimental stage, the radio is tuned to 1260 kilocycles. This is one of the two channels set aside to carry messages to Civil Defense personnel and to the public in the event of an air attack upon the United States.

Developed by W. F. Chow and J. J. Suran, engineers at General Electric Company, Syracuse, N. Y., the radio is powered by two pen-sized flashlight cells that will work continuously for a month. Modern germanium devices that can perform some of the duties of vacuum tubes are credited with extending the operative life of the batteries.

The loudspeaker is worn like the ordinary hearing-aid earpiece. The radio itself fits snugly in a vest or shirt pocket. The engineers are now trying to perfect their device before having it considered for mass production.

Science News Letter, July 3, 1954

CE FIELDS

ENGINEERING

Power Line Broadcasts Radio to Lick Static

➤ SWEDISH ELECTRICAL engineers have licked a radio interference problem created by their high-tension power lines. They are converting their lines into huge radio station antennas.

The fight-fire-with-fire plan of attack came after a 230,000-volt power system was upped to 400,000 volts, members attending the American Institute for Electrical Engineers meeting in Los Angeles were told.

B. G. Rathsman, S. Parding and C. A. Enstrom reported that the higher voltage caused radio static that could not be cut out economically with various shielding techniques. The Swedish State Power Board members said the problem was solved by hooking a 250-watt radio transmitter to the power line and using the lines to rebroadcast the program being drenched with static.

The program had much more power than the static had. Thus persons living near the power line were no longer bothered with "buzzsaws," "typewriters" and "machine guns" in their radios.

Science News Letter, July 3, 1954

ENGINEERING

Liquid Metals for Atomic Power Plants

➤ ATOMIC POWER plants of the future will run on liquid metals which will supply fuel, control the reaction, and transfer the heat out to where it can be utilized.

This look at the future of atomic power was presented in papers from the Brookhaven National Laboratory given at the International Congress on Nuclear Engineering at the University of Michigan.

Uranium and thorium, the two materials from which atomic energy can be obtained, will be dissolved in other and lighter metals, such as lead, bismuth and tin, or combinations of them.

Thorium, not itself capable of being converted from mass into energy, can be bred into uranium 233, which is itself fissionable. The new kind of atomic power plant would not only utilize uranium for power, but constantly produce the uranium anew from the less valuable thorium.

Studies are being made to work out a method whereby the liquids would clean themselves of the "ashes," or the debris, of the atomic reaction. Because these metals have to be handled at temperatures of about 500 degrees Centigrade, it is necessary to build the power machine out of very unusual materials, such as specially processed graphite or unusual metals like zirconium and beryllium. Work on this is being done at numerous places throughout the country.

Another possibility is that sodium hydroxide, which is a very costly material when in anhydrous form, can probably also be used as a liquid in which atomic energy materials can be handled in reactors.

These reactors or atomic power plants of the future are a considerable distance ahead even for such highly developed atomic engines as the one which will drive the atomic submarine, Nautilus. This submarine engine has already run many hours in a test at the Idaho Desert Experimental Station.

Work on liquid metal fuel reactors was done by D. W. Bareis, R. H. Wiswall Jr. and W. E. Winsche of the Brookhaven National Laboratory.

Science News Letter, July 3, 1954

OPHTHALMOLOGY

Blindness Causes Seen Changing in the U. S.

➤ THE CAUSES of blindness in the United States are changing, Dr. Franklin M. Foote, executive director of the National Society for the Prevention of Blindness, New York, reported at the interim Congress of the Pan-American Association of Ophthalmology meeting in Sao Paulo, Brazil.

Of all infections, or germ diseases, that blind babies and children, German measles in the mother during the first three months of pregnancy now takes the lead. It caused 1.2% of blindness in 2,412 blind children under age seven in 16 states.

By contrast, there has been a 50% decrease in syphilis as a cause of blindness during the last 20 years. It caused 0.3% of the blindness in the group that owed 1.2% of their blindness to German measles in their mothers. Ophthalmia neonatorum, familiarly known as babies' sore eyes, caused 0.4%.

The trend in blindness among children that at first appeared downward during the past 25 years now seems to be increasing.

"The reason for the greater prevalence of blindness among children, despite gains made in controlling blindness from infections and injuries, has been the emergence of the retinopathy of prematurity—retrolental fibroplasia—as a cause of blindness," Dr. Foote declared. "Described first by Terry in 1942, retrolental fibroplasia by 1950 was the cause of 48% of all the blindness among children under seven years of age in 11 states."

The shift in population in the United States to a relatively large proportion over 45 years apparently has brought a great increase in blindness due to cataracts, glaucoma and uveitis.

Dr. Foote declared there is a "pressing need for more intensive education of the public, for professional education, for social and public health activities related to case finding and case follow-up, and for the greater support of fundamental laboratory research and of the clinical application of the newer knowledge derived from studies in the basic sciences."

Science News Letter, July 3, 1954

TECHNOLOGY

Tour United States in Homemade House Trailer

➤ IF YOU have the urge to pick up and go, to wheel across America on an extended vacation, perhaps you can use an idea for a build-it-yourself trailer worked out by Eugene C. Winslow, associate professor of chemistry at the University of Rhode Island.

Made at a cost of about $250 for materials, the 1,300-pound trailer consists of three-eighth inch and three-quarter inch marine plywood frames mounted on an old truck axle obtained from a junk yard.

It looks like a house trailer for midgets while being towed along the road. But its top cranks up like the top of a deep box so that a six-foot man can stand erect inside with inches to spare. It will accommodate the professor, his wife and four children.

Bunks are arranged inside in two tiers of three each. Three of them are full length, and three are five feet eight inches long for the smaller children. The bunks also are raised or lowered for sleeping or travel.

Jutting out from the front of the trailer is an area containing an ice box, a three-burner stove that uses bottled fuel, and a water tank. The trailer's door is built on the Dutch principle—that is, it is made in two sections.

Science News Letter, July 3, 1954

MEDICINE

Two New Drugs Give Good Results in TB

➤ TWO NEW drugs for treatment of tuberculosis were announced at the meeting of the American College of Chest Physicians in San Francisco.

One, called streptoduocin, is made of equal parts of two older anti-TB drugs, streptomycin and dihydrostreptomycin. In trials at the Philadelphia General Hospital, all patients could take it without toxic effects and with typical good results in stopping the disease.

Many of the patients had previously had large doses of streptomycin or dihydrostreptomycin alone, and many had shown signs of damage to the hearing nerve or to the inner ear or both.

The good results with streptoduocin were reported by Drs. Harry Shubin, Charles A. Heiken, Allen Glaskin, Edward Pennes, Sushil Chakravarty and Franklin Rutberg of Philadelphia.

The other new anti-TV drug is Salizid. It is chemically similar to isoniazid. When tried in patients, it seemed as effective as isoniazid. Nerve damage following its use is "unusual," reported Drs. Sol Katz, Georges F. McCormick, Patrick B. Storey, Angel de Leon, Monroe J. Romansky and Edward E. Marshall Jr. of Washington, D. C.

Occasionally, they reported, Salizid was effective in patients who were no longer helped by isoniazid.

Science News Letter, July 3, 1954

PHYSIOLOGY

Athletes Have Good Hearts

Study of former champions now in their forties or fifties shows that their training makes them more fit, physically and mentally. Sedentary oldsters also benefit by exercise.

By MARJORIE VAN DE WATER

➤ "ATHLETE'S HEART" is a myth. There is a widespread impression that champion athletes when they reach middle age suffer from enlarged hearts, break down physically and are likely to die young of heart disease.

This impression is shown to be false by research performed by Dr. Thomas K. Cureton of the Physical Fitness Research Laboratory, University of Illinois.

Dr. Cureton, himself formerly a national champion in swimming, traveled about Europe and gave about 128 tests to 55 former athletic champions in seven nations, comparing the results with the same tests made on middle aged men who had not been athletes, and with non-athletic young men. The "Flying Finn" Nurmi and the French tennis star Henri Cochet were among those he studied.

When the champion athlete deteriorates physically in middle age, Dr. Cureton found, it is not because he overdid his athletic activity in his youth. It is because, after he won his title, he lapsed into a sedentary life, ate heavily, drank a lot, smoked too much, and so tore down with excesses the magnificent physique that his athletic training had built up. Those who have kept active are superior physically to the average middle-aged man and so is the average of all the former champions tested.

Average Former Champion

The average former champion tested by Dr. Cureton won his title ten years ago. He is close to 45 years of age. He has wider shoulders, smaller hips and less bay window than has the non-athletic middle-aged man. He also has better feet, stronger hands, and a more efficient heart and blood circulation.

The former champion weighs more than the non-athletic young man, but he is nearly five pounds lighter than the non-athletic man of his own age.

The extra weight he carries is not fat, for the most part, however. Dr. Cureton picked up those annoying rolls of fat and measured them—at the cheek (jowl), the inner tube around the abdomen and waist, in the seat of the pants, and front and back of the thigh.

When these measurements were added together, the sum came to only 78.84 millimeters for the former champions, compared to 139 millimeters for the non-athletic middle-aged men, and 135 millimeters for the non-athletic young men.

Dr. Cureton has another way of telling what proportion of a man's weight is surplus fat. He has them swim or dive down to a seven-foot depth under water and then measures the time it takes for them to float to the surface. The non-athletic middle-aged men pop up faster than do the non-athletic young men. This shows that the man who is "getting along" without physical training is softer than the younger men. Not all the former champions were given this particular test but those who did take the test required more time to surface than the men of their age who had not had physical training. The former champion is more solid.

On blood circulation and breathing tests, the former champions averaged better than the non-athletic men of their own age. Dr. Cureton could find no sign that the champions had deteriorated. He did find evidence that they have better blood flow and better tolerance of stress. Their general condition is more ready for action, psychologically and physiologically.

The former champions are stronger than the other men; they have more powerful backs and legs, and have greater strength in proportion to their weight. They are also more agile and have better muscular endurance.

Dr. Cureton did not study baseball, basketball or football players, so he has no answer to the question of why some players have such a short time in stardom while others like the famous Satchel Paige never seem to grow too old to give a creditable performance.

One reason, however, why he did not include them in his study is because they do not have the same kind of athletic training that individual athletes do. During the season they may be held to some sort of training rules, but out of season they are likely to let themselves go, eat and drink what they please and fail to get their customary exercise.

Variations With Sports

Different sports develop different parts of the body, Dr. Cureton observed. Middle distance runners and swimmers have the broadest chests. Swimmers also have the greatest shoulder width, hip width, chest depth and are biggest around the chest when it is expanded to the maximum.

Athletes in these two sports, however, are unlike in their fat. Middle distance men have the least fat. Swimmers have the most.

Chest expansion is greatest for the gymnasts, 3.90 inches, and next for the swimmers, 3.75 inches. It is smallest for the sprinters and hurdlers, 2.25 inches.

FORMER CHAMPION'S FITNESS—Gil Dodds, great American miler who won the American indoor record in 1948 by running a mile in 4 minutes 5.3 seconds, is shown here years later taking fitness tests. At the left, he is on the all-out treadmill run while scientists make their measurements. Dr. Thomas K. Cureton, University of Illinois, is holding the oxygen tube. At right, immediately after the all-out run, Gil looks very tired, but the doctors find that he stood up under the tests like the champion he is.

Swimmers have the poorest foot arches, but they have the fastest reaction times and the best breath holding times.

What of the man who has led a sedentary life until he has reached middle age? Can he start physical training then and improve his condition? Or is it dangerous for the oldster to begin to be active physically?

Dr. Cureton firmly believes that the middle-aged softy can and, by all means, should begin to exercise.

Mild Exercise Beneficial

He points to the example of a college professor 50 years old. This man did do a little gardening, fishing, canoeing and walking but irregularly and mostly in the summer. He was overweight, had rising blood pressure and sluggish circulation, couldn't sleep well, had weak and painful feet and just didn't feel well.

The pressure of work and responsibility on him was heavy. He was a little afraid he might have a breakdown as had several of his friends. So he consulted Dr. Cureton.

After careful tests and a thorough medical examination, Dr. Cureton recommended the following program:

Walking to and from work, five days a week, about two miles a day.

Home calisthenics twice a day for 10 to 15 minutes.

A daily bath, cool six days a week and a short hot bath once a week. Vigorous towel rubs after each bath.

Golf or a long hike once a week.

Ultraviolet baths three times a week.

Reduction of fried and starchy foods and eating relatively more fruits, vegetables and protein food.

After six months of this program, during which time the professor took no medicine and kept up his full professional load, the tests were repeated.

The professor had lost 28% of his over-all fat and 46% of his abdominal fat. His blood pressure had gone down—20% for the systolic pressure and 41% for the diastolic. His pulse was stronger, a 35% increase in the pressure lying down.

He also reported that he could do more work with less fatigue. He had better endurance.

This shows what the older man can do toward reconditioning himself by working alone and in moderation. It is quite possible, Dr. Cureton comments, that the professor in these six months increased his distance from death.

Classes for physical training of the middle-aged have been tried by Dr. Cureton. Men in classes improve their physical condition, but the changes are not so great as for the individual, when that person is conscientious and keeps up his exercise regularly six or seven days a week.

If more middle-aged people would keep to a regular program of physical exercise, it would lengthen life and cut down the tragic deaths from heart disease in men and women near the prime of life, Dr. Cureton believes.

Science News Letter, July 3, 1954

ASTRONOMY

Volcanic Ash on Mars

▶ THE DARK markings on the red surface of Mars are drifts of volcanic ash, not vegetation as many have proposed.

Active volcanoes on Mars have been suggested by Dr. Dean B. McLaughlin of the University of Michigan as the most plausible source of material such as is required to make the volcanic drifts. He told the American Astronomical Society meeting in Ann Arbor, Mich., that this idea was based on his analysis of the pattern of prevailing winds that should occur on Mars.

Astronomers all over the world are now training their telescopes on this fascinating planet, now making a very close approach to the earth. On July 2, it came within about 39,800,000 miles of us.

The dark green markings seen on the surface of Mars, Dr. McLaughlin believes, are mostly elongated streaks whose directions closely match those of the strong winds during Martian summers. During other Martian seasons, while the winds will have other directions, they will be so much weaker that they cannot erase the pattern of drifted ash formed during the summers.

In the dry, oxygen-poor atmosphere of Mars, volcanic ash should be green rather than brown as on earth, he suggested. It has long been known that the dark areas on Mars become greener during the planet's summer, and some theories attribute this to the growth of vegetation.

However, the Michigan astronomer pointed out that this color change is just what would be produced by the greater spread of the green ash by the strong prevailing winds at that season.

Mar's canals, according to Dr. Laughlin, would be long, narrow, ash drifts, or in some cases, volcanic rifts in the planet's crust. According to the astronomer, the conditions on Mars correspond to an early stage in the earth's development, so that the red planet may possibly be one on which oceans have yet to form, and on which life is still to appear.

Science News Letter, July 3, 1954

WHAT MISTAKES IN DRIVING DO YOU MAKE?

CAN you start a wet motor, take curves without rubbing off miles of rubber, get juice from a battery that seems dead, put out a fire beneath the hood, start on ice without spinning the wheels, pull out of a skid without whirling into approaching traffic?

What common mistakes do you make on flooded roads, on icy hills? What do you do when a car darts out at you from a side road? Do you know how to stop a car FASTER when emergency demands you stop on a dime? Do you know how to avoid a sideswipe, pass a truck crawling up a hill, even what to do in that split second you can act when a head-on collision seems inevitable? Do you KNOW what to do or will you do the first thing that comes to mind in that moment of panic?

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Books of the Week

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ACOUSTICS—Leo L. Beranek—*McGraw-Hill*, 481 p., illus., $9.00. A text for college seniors and first-year graduate students. The author is an associate professor at Massachusetts Institute of Technology.

BACK OF HISTORY: The Story of Our Own Origins—William Howells—*Doubleday*, 384 p., illus., $5.00. The story of man's beginning starts way back before man was, some 75,000,000 years ago. The story is here unfolded in readable fashion.

BIOLOGICAL APPLICATIONS OF FREEZING AND DRYING—R. J. C. Harris, Ed.—*Academic*, 415 p., illus., $10.00. Since development during the war of the technique of freeze-drying as a method of preserving blood plasma and penicillin, it has been found useful for keeping a wide variety of biological products.

A BRIEF TEXT IN ASTRONOMY—William T. Skilling and Robert S. Richardson—*Holt*, 327 p., illus., $4.00. For the student who has time for only a one-semester course in this engrossing subject.

THE CAUSES AND TREATMENT OF BACKWARDNESS—Sir Cyril Burt—*Philosophical Library*, 128 p., $3.75. Chief aim of this practical book, directed to teachers, is to show that the treatment of the retarded child must be not only sympathetic but also scientific.

CIVIL AIR REGULATIONS FOR PILOTS — Associated Aeronautical Staff—*Aero Publishers*, 14th ed., 88 p., paper, $1.75. A reference guide. Contains a reprinting of Civil Aeronautics Bulletin No. 32 on Fundamentals of Elementary Flight Maneuvers.

COLLEGE BOTANY—Harry J. Fuller and Oswald Tippo—*Holt*, rev. ed., 993 p., illus., $6.90. A general introduction to botany at the college level, with considerable material on the economic uses of plants and information useful to the student of applied plant sciences.

COLLEGE TEXTBOOK OF PHYSICS—Arthur L. Kimball, revised by Alan T. Waterman—*Holt*, 6th ed., 942 p., illus., $7.95. A college text which first appeared 40 years ago.

THE COMPARATIVE MYOLOGY OF THE MAMMALIAN GENERA SIGMODON, ORYZOMYS, NEOTOMA, AND PEROMYSCUS (CRICETINAE), WITH REMARKS ON THEIR INTERGENERIC RELATIONSHIPS—George C. Rinker—*University of Michigan Press*, Miscellaneous Publications Museum of Zoology, University of Michigan, No. 83, 124 p., illus., paper, $1.25.

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CURRENT THERAPY 1954: Latest Approved Methods of Treatment for the Practicing Physician—Howard F. Conn, Ed.—*Saunders*, 898 p., $11.00. Intended to bring to the busy practicing physician news of current methods of treatment in a form that is authoritative and easy to make use of. A roster of drugs and useful tables are included.

ECONOMIC PROGRESS AND ECONOMIC CHANGE—Solomon Fabricant—*National Bureau of Economic Research*, 34th Annual Report, 97 p., paper, free upon request direct to publisher, 261 Madison Ave., New York 16, N. Y.

FERROMAGNETIC DOMAINS—K. H. Stewart—*Cambridge University Press*, 176 p., illus., $4.75. One of the Cambridge Monographs on Physics that are intended to present the results of recent research.

FIFTY YEARS OF MEDICINE—Lord Horder—*Philosophical Library*, 70 p., $2.50. Reminiscences of his own years in the medical profession.

FUNDAMENTAL PRINCIPLES OF BACTERIOLOGY—A. J. Salle—*McGraw-Hill*, 4th ed., 782 p., illus., $8.50. Intended to provide the beginner with a solid foundation for more advanced work. This edition has been completely revised.

GENERAL CHEMISTRY—P. W. Selwood—*Holt*, rev. ed., 657 p., illus., $6.00. For the student whose major interest may or may not be in chemistry.

GENERAL COLLEGE CHEMISTRY—Andrew J. Scarlett and Jose Gomez-Ibanez—*Holt*, 645 p., illus., $6.00. A first-year college text.

GEORGE DAVIDSON: Pioneer West Coast Scientist—Oscar Lewis—*University of California Press*, 146 p., illus., $3.50. Biography of one who played a preeminent part in the advancement of our knowledge of the geography of the Pacific Coast. He also built and equipped the first astronomical observatory on the Pacific Coast.

GREEKA: Eagle of the Hebrides—Joseph E. Chipperfield—*Longmans, Green*, 236 p., illus., $3.00. A romantic and poetically written story of an eagle who was captured and carted off to a zoo, but at last escaped and made his way back to his faithful mate. Incidentally, the story of the rugged landscape of the Hebrides.

HEALTH FOR EFFECTIVE LIVING: A Basic Health Education Text for College Students—Edward B. Johns, Wilfred C. Sutton, and Lloyd E. Webster, adviser and consultant Walter H. Brown with foreword by Bernice Moss — *McGraw-Hill*, 473 p., illus., $4.75. A college text, especially for students in freshman or sophomore required courses.

INDEX TO THE LITERATURE ON SPECTROCHEMICAL ANALYSIS: Part III, 1946-1950—Bourdon F. Scribner and William F. Meggers—*American Society for Testing Materials*, 226 p., paper, $4.50, all three parts, $7.50. This part brings the total of references up to 1,264. Listed chronologically and alphabetically by first author's name.

INSECT FACT AND FOLKLORE—Lucy W. Clausen—*Macmillan*, 194 p., illus., $3.50. An entomologist of the American Museum of Natural History here tells true and romantic tales of the insects that interest, entertain and enchant us, as well as those that plague us.

INTRODUCTION TO PSYCHIATRY—O. Spurgeon English and Stuart M. Finch—*Norton*, 621 p., $7.00. A textbook oriented along psychoanalytic lines.

INTRODUCTION TO STATISTICAL THERMODYNAMICS—Malcolm Dole—*Prentice-Hall*, 250 p., illus., $6.25. A text on a subject that, the author says, bridges the gap between thermodynamics and kinetics on the one hand and between chemistry and physics on the other.

A LINE-FORMULA CHEMICAL NOTATION—William J. Wiswesser—*Crowell*, 149 p., $2.00. Describing a new method by which even complicated chemical structures may be expressed concisely and without ambiguity in a single line of letters, numbers and punctuation marks.

MAKING BETTER USE OF THE HUMAN FACTOR IN SELLING — M. J. Dooher, Ed. — *American Management Association*, Marketing Series Number 93, 32 p., paper, $1.25.

MANUAL OF THE ICAO STANDARD ATMOSPHERE: Calculations by the NACA — International Civil Aviation Organization, Montreal, Canada, and Langley Aeronautical Laboratory —*National Advisory Committee for Aeronautics*, Technical Note 3182, 132 p., paper, limited number of copies free upon request direct to publisher, Washington 25, D. C.

METHODS OF CROP FORECASTING — Fred H. Sanderson — *Harvard University Press*, 259 p., $5.00. The author, who was formerly economist and statistician for the Crop Reporting Service, here evaluates recent developments in the field.

MICROBIOLOGY OF MEATS—Lloyd B. Jensen—*Garrard*, 3d ed., 422 p., $6.00. Much new technological material has recently become available. Obsolete material has been deleted.

MOUNTAINS IN THE DESERT—Louis Carl and Joseph Petit—*Doubleday*, 318 p., illus., $3.95. Describing a trip by camel across the Sahara taken by two young French archaeologists in search of some beautiful prehistoric drawings.

THE NATURE OF SCIENCE AND OTHER LECTURES—Edwin Hubble—*Huntington Library*, 83 p., illus., $2.00. A noted astronomer expresses his philosophy and tells what he thinks must be done to prevent "the war that must not happen."

A NEW FLYCATCHER FROM VENEZUELA, WITH REMARKS ON THE MOCQUERYS COLLECTION AND THE PICULET, PICUMNUS SQUAMULATUS—John T. Zimmer and William H. Phelps—*American Museum of Natural History*, Novitates No. 1657, 7 p., illus., paper, 25 cents.

NEW HANDBOOK OF THE HEAVENS—Hubert J. Bernhard, Dorothy A. Bennett and Hugh S. Rice—*New American Library*, 272 p., illus., paper, 50 cents. Pocket edition of a book originally published by *McGraw-Hill*. Written for home astronomers, both beginners and more advanced students.

A NEW HARVEST MOUSE OF THE GENUS REITHRODONTOMYS FROM TAMAULIPAS, MEXICO —George G. Goodwin—*American Museum of Natural History*, Novitates, No. 1660 3 p., paper, 25 cents.

NUTRITIONAL FACTORS AND LIVER DISEASES—Klaus Schwarz, Chairman—*New York Academy of Sciences*, 348 p., illus., paper, $4.50. Bringing together a variety of contributions to the field so as to integrate present knowledge.

ORGANIC CHEMISTRY: A One-Semester Course —Lawrence H. Amundsen—*Holt*, 368 p., illus., $4.75. For the student who does not intend to prepare for chemistry as a profession.

THE PACIFIC NORTHWEST: An Overall Appreciation — Otis W. Freeman and Howard H. Martin, Eds.—*Wiley*, 2d ed., 540 p., illus., $8.50. Seven of the original contributors of this work are now dead and others have moved away from the area. Replacing them are 13

new authors. The book has been completely revised.

QUALITATIVE ANALYSIS AND CHEMICAL EQUILIBRIUM—T. R. Hogness and Warren C. Johnson—*Holt*, 4th ed., 621 p., illus., $5.00. This edition is intended as a first step toward the integration of qualitative analysis with general chemistry.

RACES OF THE AFRICAN FINFOOT (AVIS, HELIORNITHIDAE)—James P. Chapin—*American Museum of Natural History*, Novitates, No. 1659, 10 p., illus., paper, 25 cents.

THE REPRODUCTION OF COCKROACHES—Louis M. Roth and Edwin R. Willis—*Smithsonian*, 49 p., illus., paper, 80 cents. Cockroaches and how they multiply are important not only because they rob our pantries, but because they may also spread disease among us.

SCIENTIFIC RESEARCHES OF MELLON INSTITUTE 1953-1954—Edward R. Weidlein, President—*Mellon Institute*, 56 p., illus., paper, free upon request direct to publisher, 4400 Fifth Ave., Pittsburgh 13, Pa. The annual report of accomplishments.

SHIPS, MACHINERY AND MOSSBACKS: The Autobiography of a Naval Engineer—Vice Admiral Harold G. Bowen—*Princeton University Press*, 397 p., $6.00. The Navy led in steam, the author explains, and many other phases of engineering, pioneered in electronics and, for a long time, was the only and always the staunchest supporter in the Government of basic and applied research.

THE SIX SCHIZOPHRENIAS: Reaction Patterns in Children and Adults—Samuel J. Beck with clinical introduction by Roy R. Grinker and a chapter concerning Q Methodology by William Stephenson—*American Orthopsychiatric Association*, Research Monographs No. 6, 238 p., $5.00. Report of research conducted at the Michael Reese Hospital, Chicago, by three scientific disciplines.

SMITHSONIAN PHYSICAL TABLES — William Elmer Forsythe — *Smithsonian*, 9th ed., Miscellaneous Collections, Volume 120, 827 p., paper $9.00, cloth $10.00. For the reference shelf of scientists and engineers.

STRATIGRAPHY AND HISTORY OF THE MOENKOPI FORMATION OF TRIASSIC AGE—Edwin D. McKee—*Geological Society of America*, Memoir 61, 133 p., illus., $3.00. Describing a series of deposits that form a wedge thinning eastward from a maximum of about 2,000 feet in western Utah and southern Nevada to a vanishing point in western Colorado, northeastern Arizona and western New Mexico.

SYMPOSIUM ON FLUORESCENT X-RAY SPECTROGRAPHIC ANALYSIS—E. B. Ashcraft and others—*American Society for Testing Materials*, 68 p., illus., paper, $1.75. In recent years, improvements in the generation of high intensity X-ray beams and in means for measuring them made the X-ray method feasible for quantitative analysis.

A SYNOPSIS OF CHILDREN'S DISEASES—John Rendle-Short—*John Wright & Sons (Williams and Wilkins)*, 608 p., $7.00. Providing in outline form tables showing normal development and details of various diseases and abnormalities in children.

SYSTEMATIC NOTES ON PALEARCTIC BIRDS: No. 4, The Choughs (Pyrrhocorax)—Charles Vaurie—*American Museum of Natural History*, Novitates, No. 1658, 7 p., paper, 25 cents.

THEMES IN FRENCH CULTURE: A Preface to a Study of French Community—Rhoda Metraux and Margaret Mead—*Stanford University Press*, Hoover Institute Studies, Series D: Communities, No. 1, 120 p., paper, $1.50. To understand the French people and their attitudes toward public questions, it is necessary to know something of how they feel toward their homes, family and circle of intimate associates.

THIRTY-EIGHTH ANNUAL REPORT OF THE NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS 1952: Including Technical Reports Nos. 1059 to 1110—Jerome C. Hunsaker, Chairman—*Govt. Printing Office*, 1191 p., illus., $8.75. This report tells the story of practical supersonic flight becoming a reality.

THREE NEW SUBSPECIES OF BIRDS FROM AFRICA—Dean Amadon—*American Museum of Natural History*, Novitates, No. 1656, 4 p., paper, 25 cents.

TIME COUNTS: The Story of the Calendar—Harold Watkins with a foreword by Lord Merthyr—*Philosophical Library*, 274 p., illus., $4.75. An account of the various movements for calendar reform together with the history of man's attempt to count his days.

A TREATISE ON CONIC SECTIONS CONTAINING AN ACCOUNT OF SOME OF THE MOST IMPORTANT MODERN ALGEBRAIC AND GEOMETRIC METHODS—George Salmon—*Chelsea*, 6th ed., 399 p., paper $1.94, cloth $3.25.

TREATMENT OF WITHDRAWAL SYMPTOMS OF PERSONS ADDICTED TO NARCOTIC DRUGS—Hubert S. Howe and Lynn Stratton Morris — *Welfare and Health Council of New York City*, 24 p., paper, $1.00.

URBAN TRAFFIC CONGESTION: Presented at the Thirty-third Annual Meeting, January 12-15, 1954—John W. Gibbons and others—*Highway Research Board*, Bulletin 86, 39 p., illus., paper, 60 cents. Presenting a scientific method for tackling the irksome problem of traffic congestion.

V-2—Walter Dornberger, translated by James Cleugh and Geoffrey Halliday with introduction by Willy Ley—*Viking*, 281 p., illus., $5.00. Here is the story of the Peenemünde research institute, the great experimental rocket station in Germany where the V-2 was developed, written by General Dornberger who was in charge of that station. It tells much of the struggle of German scientists attempting to work under a totalitarian regime.

THE VOTER DECIDES—Angus Campbell, Gerald Gurin and Warren E. Miller with the assistance of others—*Row, Peterson*, 242 p., $4.75. Reporting a study of the 1952 election by the Survey Research Center of the University of Michigan. It was the influence of "Ike" himself rather than any new popularity of the Republican party that carried the day. And it was Eisenhower's competence in the field of foreign affairs that gave people confidence in him.

Science News Letter, July 3, 1954

TECHNOLOGY

Endless Belt for Coal and Iron Ore

➤ AN ENDLESS belt linking Lake Erie with the Ohio River 100 miles away has been designed to shuttle iron ore and coal from river barge to lake carriers or storage bins.

Legislation will be introduced in the Ohio Legislature in 1955, to give the belt conveyor the status of a common carrier, the Goodyear Tire and Rubber Company, Akron, has announced.

A model of the Riverlake Belt Conveyor Lines System has been built for display throughout Ohio. It contains 6,776 working parts and carries "make-believe" iron ore and miniature coal.

Science News Letter, July 3, 1954

ARCHAEOLOGY

Ancient Stone Idols Discovered in Georgia

➤ TWO STONE idols, one male and one female, have been found near a stone grave in the important ancient Indian Etowah mound near Cartersville, Ga.

The figures are seated and are about two feet high. The bodies are carved in remarkable detail and are painted. They are also decorated with copper plates and wear headdresses.

Apparently none of the early European explorers visited Etowah during its occupation. It is strictly prehistoric.

The stone idols, or images, were found by an expedition sponsored by the Georgia Historical Commission in cooperation with State Park Service. Archaeologist in charge is Dr. Lewis H. Larson Jr., who is working under the direction of Dr. Arthur R. Kelley of the University of Georgia.

The figures are like others which were found in the Etowah mounds in the 1920's by the late Dr. Warren K. Moorehead, then of Phillips Academy, Andover, Mass.

The newly found figures, like those discovered previously, suggest strongly a link between the Etowan people who made them and the Aztecs of far-away Mexico and Yucatan. Certain prevailing concepts are apparent in both the Etowan and Aztec art, notably the posture of the seated figure. Yet the Etowah art has been pronounced inferior to that of the Aztecs.

If the Aztec concepts of art were introduced in Georgia by migration from Mexico, it must have been at a very early date, archaeologists speculate. Possibly, travelers coming from Mexico may have described the art they saw there or even brought with them some objects which were then copied by the Etowan people.

Another theory has been proposed by Dr. Moorehead, and that is that the Muskhogean culture of the Etowan people might have developed in our Southland and the migration might have been westward to Mexico instead of in the reverse direction.

Little evidence is available one way or the other, but archaeologists feel that when it has been possible to find the exact origin of Indian corn and trace the pathways of its distribution, much more will be known about how this continent was originally peopled.

Science News Letter, July 3, 1954

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ORNITHOLOGY

NATURE RAMBLINGS

Bald Eagle

➤ NEITHER BEN Franklin nor John Audubon, two of the most noted American scientists, thought much of the choice of the bald eagle as the American national bird.

The bald eagle is a handsome, ferocious-looking bird, with his snow-white head and neck above his dark brown body. His habit of choosing a nest site in the clouds, on an inaccessible crag in the mountains or at the top of a towering tree, lends itself to our concept of the bird as a symbol of power and dignity.

But when we come to know him a bit better, as Audubon did, the American eagle does not seem so attractive after all. He is not the wild, fierce, free-hunting bird which Fourth-of-July orators are wont to make him. More often, he is a robber and a carrion feeder, like the vulture.

He does eat meat, to be sure; but if he has a choice, he will take fish—and he is not always fussy about how he gets it.

A favorite trick of the bald eagle, as described by Audubon and by many naturalists after him, is to circle in the air while an osprey, the well-known fish hawk, works below him. The osprey is a fine large bird that can plummet down into the water, snatch a fish from beneath the surface and fly off with it.

When the eagle sees the osprey rise with a catch, he swoops down from twelve o'clock high, screaming his loudest. The osprey, alarmed by attack, drops his fish and dives for safety. That is just just what the eagle wants.

He continues his own dive, not after the osprey but after the dropped fish, catches it in mid-air and bears it off triumphantly. A clever enough stunt, this trait of the eagle's, but not a particularly good sign of noble character. And Audubon would be among the first to point this out.

Benjamin Franklin's opinion of the bald eagle was no higher than that of Audubon. Franklin contended that the national bird of the new republic should be a turkey, if the country must have any bird as its emblem.

The gobbler, he pointed out, is just as exclusively American as the eagle; it is a peaceful and highly useful bird, particularly at Thanksgiving, rather than being piratical and predatory. And the turkey, although it will fight only when its family is threatened, will then do battle against dismaying odds.

But the advice of Franklin and Audubon was disregarded. The bald eagle was enthroned on our national coat of arms and our coins. July 4 became a time to talk about the great qualities of the fearless bald eagle.

There is no doubt that any eagle inspires the admiration and respect of one seeing him in his natural habitat. And Audubon, if he were here, would chuckle over silver money he might receive. For there are more than a few coins in circulation now which portray, not the bald eagle, but the golden eagle, which is native to the Old World as well as to America.

Science News Letter, July 3, 1954

Questions

ASTRONOMY—In what stage of development would Mars be if the planet's dark markings are volcanic ash? p. 11.

□ □ □

ENGINEERING—How has static on radios from power lines been licked in Sweden? p. 9.

□ □ □

MEDICINE—What is an "analgesic"? p. 4.

How can arsenic be used to spot brain tumors? p. 5.

□ □ □

OPHTHALMOLOGY—What disease now leads in causing blindness in children? p. 9.

□ □ □

PHYSIOLOGY—What is one way of testing the proportion of a man's weight that is surplus fat? p. 10.

□ □ □

PSYCHOLOGY—What is a new theory as to why humans speak? p. 8.

□ □ □

Photographs: Cover, Minneapolis-Honeywell; p. 3, Convair; p. 5, Radio Corporation of America; p. 7, University of Illinois; p. 10, Thomas K. Cureton; p. 16, Milton Riback.

ASTRONOMY

Unipolar Solar Regions

➤ MUCH BETTER understanding of the causes of aurora, disturbed shortwave radio reception and other results of high geomagnetic activity may result from the discovery of "unmagnetic" regions on the sun's surface.

The slight bump made where a balloon is tied would somewhat resemble the way a unimagnetic pole appears on the sun when its magnetic field is mapped. This pole can be thought of as one end of a long bar magnet sticking out of the sun. Exactly where the other end of the magnet is, astronomers are not quite sure.

A tie-in between these unimagnetic poles and severe geomagnetic storms here on earth was suggested to the American Astronomical Society meeting in Ann Arbor, Mich., by Drs. H. D. and H. W. Babcock, a father and son astronomical team from Mt. Wilson and Palomar Observatories in California.

Astronomers have long known that the sun's surface is covered with magnetic areas, some positive in polarity, some negative. In sunspots, also, some spots are positive, some negative. Sunspots usually come in pairs, each one of the pair always having opposite polarity, as if the disturbance causing the spot curls down under the surface with its oppositely magnetized ends protruding.

The new unimagnetic regions, predominantly of one sign, are not related to other features of the sun's surface, prominences or corona. One of these new regions, first seen on Aug. 20, 1953, was observed on six successive rotations of the sun, each solar rotation averaging 27 days.

The UM regions may also be associated with a tendency of cosmic rays to have greater and less intensity in 27-day cycles.

Drs. Babcock reported on two years' observations with the solar magnetograph, an instrument that uses the Zeeman effect for the automatic measurement and recording of weak magnetic fields on the surface of the sun.

At the same symposium on turbulence and magnetic fields in the photosphere of the sun, Dr. Martin Schwarzschild of Princeton University Observatory suggested that the best place to study the solar surface would be from high-altitude balloons carrying telescopes especially designed for the purpose.

Earth-bound telescopes, Dr. Schwarzschild said, probably would never be able to observe through our ocean of atmosphere with sufficient clarity to solve the riddle of the rice-grain, or granular, structure of the solar surface.

Science News Letter, July 3, 1954

GEOLOGY

Where Trees Grew Told Iron Ore Location

➤ WHERE A certain tree grew gave geologists exploring the rich iron deposits of Venezuela their clue as to the extent of the ore, Thomas C. Oftelie of Aero Service Corp., Philadelphia, reported to the American Society of Civil Engineers meeting in Atlantic City, N. J.

A variety of the copei tree that grows only on soil produced by iron ore has a distinctive texture on aerial photographs, which can be used to guide scientists and engineers to underground ore bodies from photographs of the region.

Science News Letter, July 3, 1954

What General Electric people are saying . . .

E. KEONJIAN

Formerly an electronics scientist in Leningrad, Mr. Keonjian is now with the Electronics Division

". . . There is considerable progress in science, particularly in applied fields, such as electronics, in Russia. There are several reasons for it.

First, the Soviet Government encourages development of applied science in every field which has any prospects of being useful for military purposes.

Second, in the atmosphere of strong political pressure and frequent "purges" in which every individual lives in Russia and in satellite countries, many people regard applied sciences as relatively "safe subjects" that often do not follow all the changes and zigzags of the Communist Party line, as in the case of social science. Consequently, more people devote themselves to applied sciences rather than to any other sciences or activities.

Third, the Soviet scientists have to study the foreign languages more intensely than we do here. They watch very closely all foreign scientific and technical developments and make more efficient use of them than we do.

Fourth, the Soviet Government has complete control over the school system in Russia. It determines their programs, number of students, and their assignments after graduation.

Fifth, unlike the Western world, the Soviet Government is able, without any limitation, to concentrate the selected manpower of the country, as well as the full effort of its technology, in few selected fields which it regards vital for increase of military potential.

There is a prevailing opinion among the Western scientists that we strongly underestimate Soviet science. With few exceptions this is, however, not true. The Western scientists should always remember that together with some real achievements, there is still a considerable amount of propaganda, outward manifestation, and even charlatanry in most of the Soviet claims in science, and the tragic disgrace of Prof. Lysenko's "achievements" in Soviet genetics is not without parallel in other sciences behind the Iron Curtain.

at the IRE, Pennsylvania Section

F. K. McCUNE

Mr. McCune is General Manager, Atomic Products Division

". . . We at General Electric believe that electric companies will be owning and operating a number of atomic power plants within the next ten years.

We believe some of these will be full-scale and, what is most important, they will operate electrically at competitive costs, possibly within five, certainly within ten, years.

We believe that this will be accomplished without Government subsidy for production plant construction or operation, and that Government-supplied fuel will be priced at cost-of-production levels.

We believe that two nuclear reactors best suited for earliest and most effective competition with conventional fuel plants in this country are (a) the light water-moderated and cooled boiling reactor, and (b) the graphite-moderated water-cooled reactor. These we think hold greatest promise in the years just ahead.

In saying these production plants will operate without Government subsidy, I do not wish to detract from the immeasurable significance of knowledge developed through A.E.C. contracts. Of course, the Government's large expenditures for research and development of plutonium production reactors, mobile power reactors, and other power reactors form the base from which private industry can proceed. But, the important thing here is that we believe production size atomic power plants can be made economic. They will stand on their own feet. They may sell products to the Government. They will certainly buy nuclear fuel from the Government. But, trading with the Government need not be a subsidy.

Atomic Industrial Forum Panel
Washington, D. C.

W. S. HILL

Mr. Hill is Manager—Technical Recruiting Services, Engineering Services Division

". . . In the matter of educating the technical graduate, what industry is trying to say to educators concerning the engineer and the scientist is this:

Give us well-rounded men.

Cultivate habits of mind that will enable them to seek out unsolved problems, to systematically explore, and where possible to add to useful knowledge.

Give them basic tools in the form of fundamental knowledge for this task, but above all show them how to acquire more tools for themselves as they reach the limits of their past training.

Encourage qualities of initiative and responsibility.

Make them aware of the economic evaluation society will inevitably put on their contributions.

Help them toward attitudes of cooperation with their associates in work and community because much of their lives will be spent in working with and for people.

Prepare them to better adjust to people, situations, and the changing complexities of our society.

Foster alertness to broad social trends and the implications these have to their field of work.

G. E. Review

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COMPACT CALCULATOR adds, subtracts, multiplies and divides, using only 10 keys. Slightly larger than a telephone, the 12-pound machine is valuable to businesses needing portable, hand-operated equipment. It comes in a simulated leather traveling case and is made in Sweden.

Science News Letter, July 3, 1954

WATER-CONTROL device, designed to help alleviate municipal water shortage conditions, cuts off all flow to garden hoses and lawn sprinklers whenever the city water pressure drops to a critical point. Installed on outside faucets, the valve also snaps closed when firehose demands reduce the area's water pressure dangerously.

Science News Letter, July 3, 1954

NEW 21-INCH picture tube will permit one manufacturer to slice three inches from the depth of his 1955 line of television sets because of the tube's shortened neck. Cabinets for the 21-inch set will even be two inches less from front to back than current 17-inch models. The tube provides a 20% larger picture than other 21-inch tubes.

Science News Letter, July 3, 1954

MODEL AUTO KIT lets Junior build and paint an exact, "working" model of a well-known 1954 automobile, as shown in

the photograph. The finished toy, made of tough plastic, is complete with tinted windows and white-wall wheels. The car whizzes along on its own motor after a starting push.

Science News Letter, July 3, 1954

TAPE RECORDER-RADIO combination offers high-fidelity reproduction of radio programs through quality circuits used both by radio and recorder. Operated by two piano-key controls, the built-in tape machine also will record the user's comments while it records a favorite program or musical work.

Science News Letter, July 3, 1954

LAWN EDGER trims along sidewalks and curbs with a steel blade having ripsaw-like teeth. Slightly heavier than razor blade stock, this blade actually sharpens itself as it rubs against concrete curbs. The 50-inch handle lets the user stand while edging his lawn.

Science News Letter, July 3, 1954

"TRAVELER" TOOL KIT, slightly larger than a cigarette pack, contains a hammer, chisel, saw, file, drill, punch and screwdriver that snap on a special handle. The tools and a small jack knife are sheathed in a zippered cowhide case, and are manufactured in Germany.

Science News Letter, July 3, 1954

ALUMINUM TUMBLERS, designed for use with vacuum-seal caps, will bring processed foods to stores in colorful containers the housewife may re-use like old cheese and jelly glasses. The new tumblers, now being marketed, are available to food processors in ten colors and in five- and ten-ounce sizes.

Science News Letter, July 3, 1954

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getting that NEW BOOK you want to read. SCIENCE NEWS LETTER will gladly obtain for you any American book or magazine in print. Send check or money order covering regular retail price ($5 if price is unknown and adjustment will be made). We will pay postage in the United States. Mail us your order, listing title, author, publisher, price, and mail, with your complete return address, to Book Department, Science Service, 1719 N Street, N.W., Washington 6, D. C.

7-3-4

Do You Know?

The Hood *Seal*, once the mainstay in the livelihood of west Greenlanders, is now thought to be in danger of extinction.

About 350 skilled workers take a hand in constructing an average pair of *shoes* from the time the hide is removed to the point where the shoes arrive on retailers' shelves.

To aid tourists, Mexican policemen pin on the breasts of their uniforms tiny flags of the countries whose *languages* they can speak.

World *population* appears to have more than quadrupled since 1650.

Only 15% of the world's *forests* are managed as a renewable, continuously producing resource.

The main climatic influence on tomato growth is night temperature, 62 degrees being the most favorable for the production of large *tomatoes*.